

ABSTRACT

A permanent magnet for a particle accelerator and a magnetic field generator, in which Nd-Fe-B based magnets are used but are not demagnetized so easily even when exposed to a radiation, are provided. A permanent magnet for a particle accelerator is used in an environment in which the magnet is exposed to a radiation at an absorbed dose of at least 3,000 Gy. The magnet includes R (which is at least one of the rare-earth elements), B, TM (which is at least one transition element and includes Fe) and inevitably contained impurity elements. The magnet is a sintered magnet that has been magnetized to a permeance coefficient of 0.5 or more and that has a coercivity H_{cJ} of 1.6 MA/m or more.